# MCX W72 Secure and Ultra-Low-Power MCUs for Bluetooth LE, Channel Sounding, Matter, Thread, Zigbee

## MCX-W72

**Preproduction**

This page contains information on a preproduction product. Specifications and information herein are subject to change without notice. For additional information please contact your sales representative.

Last Updated: Nov 19, 2025

The MCX W72 family features a 96 MHz Arm® Cortex®-M33 core coupled with a multiprotocol radio subsystem supporting Matter, Thread, Zigbee and Bluetooth LE. The independent radio subsystem, with a dedicated core and memory, offloads the main CPU, preserving it for the primary application and allowing firmware updates to support future wireless standards. The MCX W72 also offers advanced security with an integrated EdgeLock® Secure Enclave Core Profile and will be supported by NXP's EdgeLock 2GO cloud services for credential sharing.
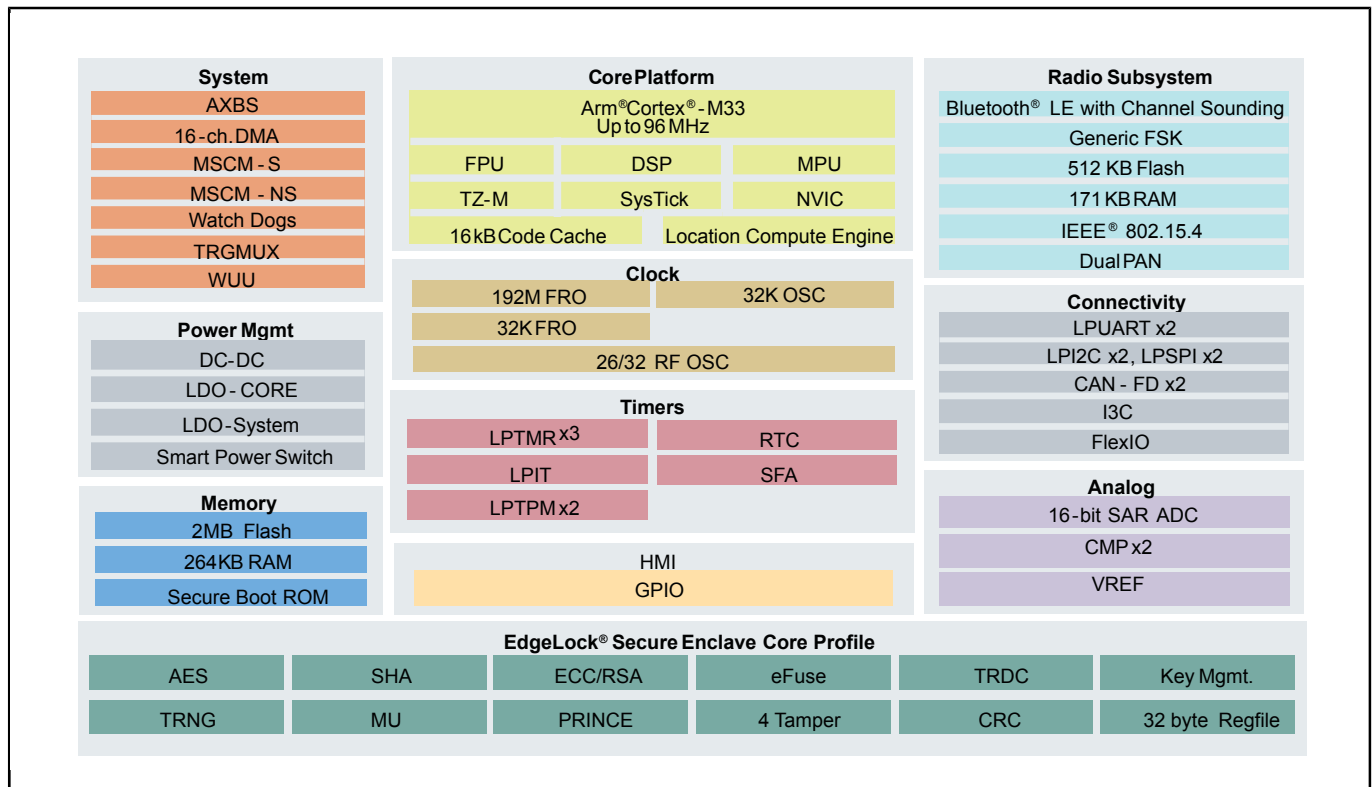
The MCX W72 family includes Bluetooth Channel Sounding capabilities, with a dedicated on-chip Localization Compute Engine to reduce ranging latency. It incorporates additional memory to support application-specific code, connectivity stacks and over-the-air firmware updates. In addition, the radio subsystem can run the full Thread or Zigbee stack alongside the Bluetooth Low Energy stack. This delivers reliable wireless performance, as the real-time activities of the radio run on a separate core from the application.

Building on NXP's strong history of providing industrial edge solutions, the MCX W series offers a wide operating temperature range from -40 °C to 125 °C and peripherals for industrial applications, including an optional CAN interface and will be part of NXP's 15-year Product Longevity program to support long-term industrial use.
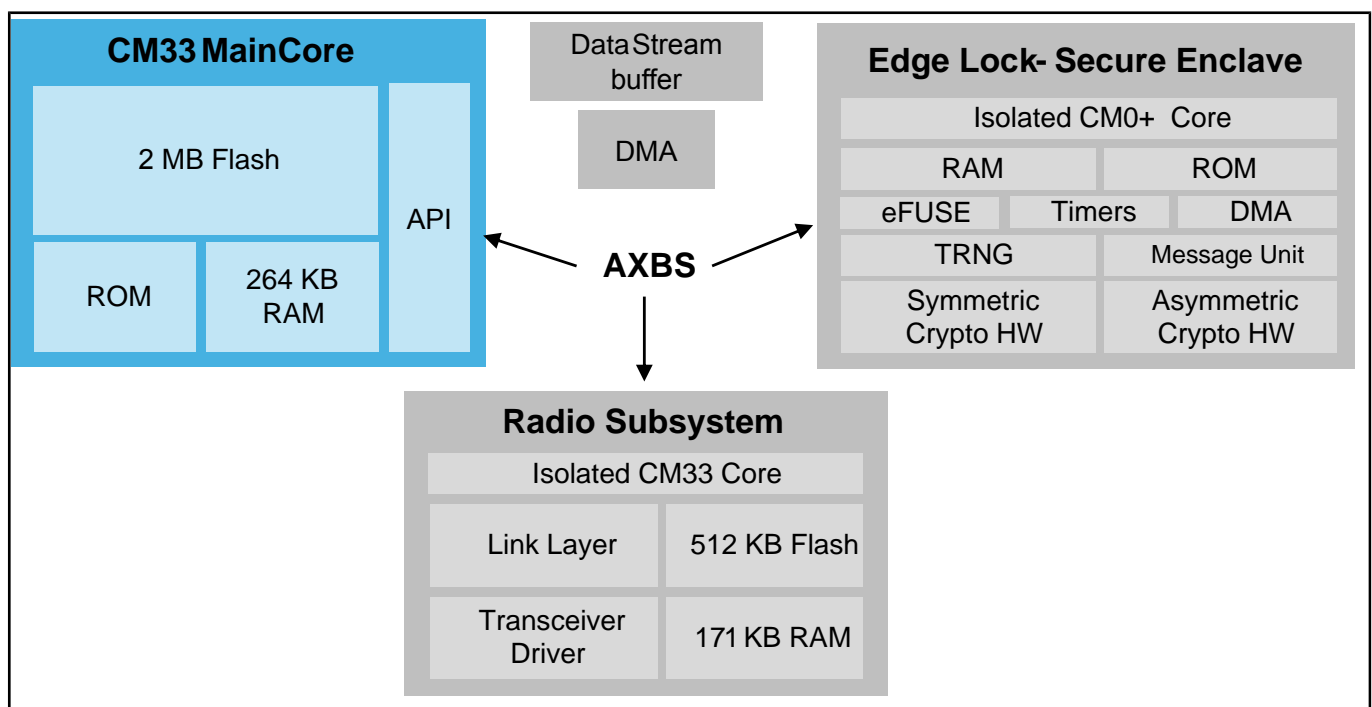
The MCX W series is supported by the MCUXpresso Developer Experience to optimize, ease and help accelerate embedded system development.

The MCX W72 is in pre-production, developers can get started today with the MCX W71x, which is pin and software compatible.

## MCX W72 Block Diagram

| System | Core Platform | Radio Subsystem |
|---|---|---|
| AXBS | Arm®Cortex®-M33 Up to 96 MHz | Bluetooth® LE with Channel Sounding |
| 16-ch. DMA | FPU / DSP / MPU | Generic FSK |
| MSCM-S | TZ-M / SysTick / NVIC | 512 KB Flash |
| MSCM-NS | 16 kB Code Cache / Location Compute Engine | 171 KB RAM |
| Watch Dogs | | IEEE® 802.15.4 |
| TRGMUX | **Clock** | Dual PAN |
| WUU | 192M FRO / 32K OSC | **Connectivity** |
| **Power Mgmt** | 32K FRO | LPUART x2 |
| DC-DC | 26/32 RF OSC | LPI2C x2, LPSPI x2 |
| LDO-CORE | **Timers** | CAN-FD x2 |
| LDO-System | LPTMR x3 / RTC | I3C |
| Smart Power Switch | LPIT / SFA | FlexIO |
| **Memory** | LPTPM x2 | **Analog** |
| 2MB Flash | | 16-bit SAR ADC |
| 264KB RAM | **HMI** | CMP x2 |
| Secure Boot ROM | GPIO | VREF |

**EdgeLock® Secure Enclave Core Profile**

| AES | SHA | ECC/RSA | eFuse | TRDC | Key Mgmt. |
|---|---|---|---|---|---|
| TRNG | MU | PRINCE | 4 Tamper | CRC | 32 byte Regfile |

## MCX W72 Architecture Block Diagram

**CM33 MainCore**
- 2 MB Flash
- ROM
- 264 KB RAM
- API

Data Stream buffer

DMA

**AXBS**

**Edge Lock- Secure Enclave**
- Isolated CM0+ Core
- RAM / ROM
- eFUSE / Timers / DMA
- TRNG / Message Unit
- Symmetric Crypto HW / Asymmetric Crypto HW

**Radio Subsystem**
- Isolated CM33 Core
- Link Layer / 512 KB Flash
- Transceiver Driver / 171 KB RAM

View additional information for MCX W72 Secure and Ultra-Low-Power MCUs for Bluetooth LE, Channel Sounding, Matter, Thread, Zigbee.

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